CLAIMS:

1. Matrix display device, having a flat display screen (41), comprising pixels arranged in rows and columns and a system having electrodes and an addressing circuit for addressing the pixels, characterized in that the matrix display device comprises cavities (20) having walls at least one of which is covered with a material (24) having a secondary emission coefficient of more than unity, the cavities forming a planar arrangement substantially parallel to the display screen, the display screen being a phosphor display screen, the cavities being provided with electrodes (21, 215, 217, 22, 225, 228) and the display device having a circuit for supplying an oscillating AC voltage (V_r, V_{RF}) to said electrodes (21, 215, 217, 22, 225, 228) for generating electrons within the cavities, the cavities (20) having apertures (25) facing the screen (41), the display device having a circuit for selectively letting electrons generated within the cavities pass said apertures and accelerating electrons having passed said apertures to the phosphor display screen.

2. Matrix display device as claimed in claim 1, characterized in that the arrangement of cavities comprises elongated cavities (20) extending in a direction parallel to a row or a column, the elongated cavities being separated by a wall (51).

3. Matrix display device as claimed in claim 2, characterized in that the cavities (20) form an arrangement of cavities elongated in a first direction, each cavity comprising a first electrode (215, 217) extending in said direction, the arrangement of cavities being provided with second electrodes (225) extending perpendicularly to the first electrodes, and in operation an oscillation AC voltage is selectively provided between at least one of the first (215, 217) and at least one of the second electrodes (225).

4. Matrix display device as claimed in claim 2, characterized in that an elongated cavity comprises two electrodes (21, 228) extending in parallel in between which in operation an oscillating AC Voltage is applied.

5. Matrix display device as claimed in claim 3 or 4, characterized in that each cavity comprises more than one of the first electrodes (217) or of the two electrodes (21, 228).

6. Matrix display device as claimed in claim 1, characterized in that the matrix display device comprises a grid arrangement having row selection electrodes (131) and column selection electrodes (81) for row and column selection of electrons.

7. Method for driving a matrix display device as claimed in any one of the preceding claims wherein for electron cloud generation within a cavity RF voltages of opposite phase are supplied to a first and second electrode within the cavity.